Evidence Summary

Hyldig et al (2016)

Scientific & Medical Affairs (Scientific Communications), Global Advanced Wound Management

NPWT significantly reduces the rate of Surgical Site Infections and occurrence of Seroma in surgical incisions

There is a steady growth in the number of RCTs investigating NPWT on surgical incisions. This meta-analysis combines 10 studies, including three studies that were not published, in a variety of surgical indications. Three studies used PICO™ and the other seven used competitor products.

Evidence

- Randomised Controlled Trials are Level 1 evidence.
- Meta-analysis is a formal statistical technique that combines multiple studies to generate a weighted average that is based on the size of each study. The aggregation of RCTs gives a higher statistical power than from any individual study.

Surgical Site Infection rate was almost halved by NPWT compared to standard care

- 46% decrease (relative risk 0.54)

Wound dehiscence rate was decreased by almost a third compared to standard care

- 31% decrease (relative risk 0.69)

Seroma formation was more than halved by NPWT compared to standard care

- 52% decrease (relative risk 0.48)

COMMENTS:

This is a unique meta-analysis study as it considers unpublished but completed RCTs when the investigator provided suitable data.
- It excludes underpowered pilot RCTs
- 3 of the 10 studies use PICO™

Fully commercially-independent study which is building the respectability of the NPWT evidence base in a respected journal.

The rate, type and consequence of wound complications are dependent on the type of surgical indication and the risk factors of the patient.

Closed surgical incision management is a fast moving field and new Randomised Controlled Trials are being published frequently.
- Search cut-off date was August 2015

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Title: Meta-analysis of Negative-Pressure Wound Therapy for Closed Surgical Incisions

Aim of the study: Meta-analysis of randomised controlled trials comparing NPWT compared to standard care on closed surgical incisions and impact on wound complications

Study Type: Meta-analysis and review

Wound Type: Closed surgical incision

Speciality/Indication: Mixed surgery, including orthopaedic (arthroplasty and trauma), cardiothoracic, breast

Products: NPWT, including PICO™ (3 out of 10 studies)

Number of patients: 1089 patients with 1311 incisions in 10 RCTs: NPWT 664; Standard care 647


Comments: Open access | video commentary on BJS website | peer-reviewed journal | PubMed listed | impact factor 5.542 –